

REMARKS

Claims 1-16 are pending in this application. Claims 1, 5, 6 and 13 have been amended to clearly define the relationship between the optical isolator and the optical fiber, as shown in FIGs. 1-4, in accordance with current Office policy, to clearly define Applicants' disclosed invention over the cited prior art. Accordingly, entry of the foregoing amendments is proper under 37 C.F.R. §1.116(b) because those amendments simply respond to the issues raised in the final rejection, no new issues are raised, no further search is required, and the foregoing amendments are believed to remove the basis of the outstanding rejections and to place all claims in condition for allowance.

Claims 1 and 5-6 have been rejected under 35 U.S.C. §102(b) as being anticipated by Nishikawa Toru et al., Japanese Patent No. 11-295560 for reasons stated on pages 2-3 of the final Office Action. In support of this rejection, the Examiner has incorrectly interpreted that the fixing resin 112, as shown in FIG. 1 of Nishikawa '560 corresponds to Applicants' claimed "optical isolator". Specifically, on pages 7-8 of the final Office Action, the Examiner argues that,

"Nishikawa teaches an optical element 112, or a fixing resin 112, as it is shown in fig. 1, that provides an optical waveguide and it can provide isolation for the waveguide."

However, this line of argument belies the actual, or intended function of a fixing resin 112, as is well known in the art, and as is described by Nishikawa '560.

As previously discussed, Nishikawa '560 discloses a well-know optical structure in which both the optical semiconductor element and the optical isolator are mounted on the common Peltier element. As shown in FIG. 1, the fixing resin 112 is used to fix onto or secure around, or cover the optical fiber 105. However, such a

fixing resin 112 does **not** function as an optical isolator, and cannot be interpreted, whether broadly or narrowly, to read on Applicants' claimed "optical isolator". This is because Nishikawa '560 does in fact use an optical isolator 213, as shown in FIG. 7, to mount on the base 202 to provide optical isolation to the optical fiber 205.

Moreover, Nishikawa '560 does **not** disclose or suggest the structure of "providing the pipe-like support member projecting from the side face of the package case for fixing the optical isolator, and jointing the optical isolator on its whole perimeter to the pipe-like support member at the distal end side thereof so as to be fixed to the support member" as generally defined in Applicants' base claims 1, 5, 6 and 13.

In order to render the rejection moot and to place the application in condition for allowance, base claims 1, 5, 6 and 13 have been amended to clearly define the relationship between the optical fiber 3 inside the package case 7, as shown, for example, in FIG. 1, and the optical isolator 4 disposed on a side face of the package case 7 in order to clearly distinguish over Nishikawa '560. For example, base claim 1, 5 and 6 have been amended to define that,

an optical isolator disposed on a side face of said package case and arranged to optically couple to a distal end of said optical fiber inside said package case for isolation and optical coupling with another optical fiber provided outside said package case.

Likewise, base claim 13 has also been amended to define that,

an optical isolator disposed outside of the package case, and aligned with the optical fiber, via the side face of the package case, and optically connected to a distal end of said optical fiber to provide a substantially collimated light beam or a substantially converged light beam.

In contrast to Applicants' base claims 1, 5, 6 and 13, Nishikawa '560 only discloses the use of a fixing resin 112, even if to be broadly interpreted as

Applicants' claimed "optical isolator", to cover an optical fiber 105. Such a fixing resin 112 is **not** arranged to optically couple to a distal end of the optical fiber inside a package case for isolation and optical coupling with another optical fiber provided outside the package case as defined in Applicants' base claims 1, 5, 6 and 13.

Moreover, as further defined in Applicants' base claims 1, 5, 6 and 13, the optical transmitter module is also characterized of providing a pipe-like support member projecting from the side face of the package case for fixing the optical isolator, and of be formed so that the optical isolator is fixed by welding on its whole perimeter to the pipe-like support member, so as to arrange the isolator at the distal end of the projecting support member. As a result, the heat generated from the optical semiconductor element can be efficiently removed, and even if the heat deformation is caused in the package case or the like and the external force is applied due to the heat deformation, the optical fiber can be stably assembled to the substrate member so as to prevent the efficiency in the optical fiber from deterioration. Therefore, the semiconductor laser element can provide a stable laser operation.

Furthermore, since the optical isolator is now mounted in the pipe-like support member, and **not** on the substrate member, the heat capacity can now be controlled by the electronic cooling element to the substrate member mounted on the electronic cooling element and the elements mounted on the substrate member to be smaller than that to the substrate member, the elements and the optical isolator. Likewise, the heat generated from the semiconductor elements can now be efficiently removed. As a result, the heat influence to the ending of the optical fiber can be advantageously minimized, and stable laser transmission can be obtained.

The rule under 35 U.S.C. §102 is well settled that anticipation requires that each and every element of the claimed invention be disclosed in a single prior art reference. In re Paulsen, 30 F.3d 1475, 31 USPQ2d 1671 (Fed. Cir. 1994); In re Spada, 911 F.2d 705, 15 USPQ2d 1655 (Fed. Cir. 1990). Those elements must either be inherent or disclosed expressly and must be arranged as in the claim. Richardson v. Suzuki Motor Co., 868 F.2d 1226, 9 USPQ2d 1913 (Fed. Cir. 1989); Constant v. Advanced Micro-Devices, Inc., 848 F.2d 1560, 7 USPQ2d 1057 (Fed. Cir. 1988); Verdegall Bros., Inc. v. Union Oil Co., 814 F.2d 628, 2 USPQ2d 1051 (Fed. Cir. 1987). The corollary of that rule is that absence from the reference of any claimed element negates anticipation. Kloster Speedsteel AB v. Crucible Inc., 793 F.2d 1565, 230 USPQ2d 81 (Fed. Cir. 1986).

The burden of establishing a basis for denying patentability of a claimed invention rests upon the Examiner. The limitations required by the claims cannot be ignored. See In re Wilson, 424 F.2d 1382, 165 USPQ 494 (CCPA 1970). All claim limitations, including those which are functional, must be considered. See In re Oelrich, 666 F.2d 578, 212 USPQ 323 (CCPA 1981). Hence, all words in a claim must be considered in deciding the patentability of that claim against the prior art. Each word in a claim must be given its proper meaning, as construed by a person skilled in the art. Where required to determine the scope of a recited term, the disclosure may be used. See In re Barr, 444 F.2d 588, 170 USPQ 330 (CCPA 1971).

In the present situation, Nishikawa '560 clearly fails to disclose and suggest all features of Applicants' base claims 1, 5, 6 and 13, particularly the relationship between the optical fiber and the optical isolator. Therefore, Applicants respectfully

request that the rejection of Applicants' base claims 1, 5, 6 and 13 and their respective dependents be withdrawn.

Claim 2 has been rejected under 35 U.S.C. §103 as being unpatentable over Nishikawa Toru, Japanese Patent No. 11-295560 in view of Timmerman, U.S. Patent No. 4,137,060 for reasons stated on page 3 of the final Office Action (Paper No. 8).

Claim 3 has been rejected under 35 U.S.C. §103 as being unpatentable over Nishikawa Toru, Japanese Patent No. 11-295560 in view of Shibukawa et al., U.S. Patent No. 5,049,429, or alternatively, in view of Lemaire et al., U.S. Patent No. 5,478,371 for reasons stated on page 4 of the final Office Action (Paper No. 8).

Separately, claim 4 has been rejected under 35 U.S.C. §103 as being unpatentable over Nishikawa Toru, Japanese Patent No. 11-295560 in view of Eales et al., U.S. Patent No. 4,615,031 for reasons stated on page 4 of the final Office Action (Paper No. 6). Since these rejections are predicated upon the correctness of the rejection of Applicants' base claims 1, 5, 6 and 13 under 35 U.S.C. §102, Applicants respectfully traverse these rejections primarily for the same reasons discussed against the rejection of Applicants' base claims 1, 5, 6 and 13.

Separately, claims 1, 5-7 and 11-14 have been newly rejected under 35 U.S.C. §103(a) as being unpatentable over newly cited prior art references, Shibanuma, U.S. Patent No. 4,803,689 in view of Shimizu, U.S. Patent No. 5,960,142 for reasons stated on pages 5-6 of the final Office Action (Paper No. 8). Specifically, the Examiner cites FIG. 1B of Shibanuma '689 for allegedly disclosing the use of:

"an optical isolator (15', fig. 1B) disposed outside of the package case and aligned with the optical fiber (note that cylinder 15' provide an isolation or protection for the fiber 14' that is extended to outside of the package case module 9'); a pipe-like support member (11', fig. 1B)

projecting from the side face of the package case to fix the optical isolator (15', fig. 1B), wherein the optical isolator is joined on its perimeter to the pipe-like support member at a distal end thereof so as to be fixed to the pipe-like support member (note that cylinder 15' is joined on its perimeter to the pipe-like support member 11' at a distal end of package case 9')."

However, this citation is misplaced. Element 15' as shown in FIG. 1B of Shibnuma '689 only refers to the cylinder 15' used for protecting the outer surface of the optical fiber 14', as described on column 2, lines 65-68 of Shibnuma '689.

As a secondary reference, Shimizu '142 does **not** remedy the noted deficiencies of Shibnuma '689 in order to arrive at Applicants' base claims 1, 5, 6 and 13. This is because Shimizu '142 is only cited for allegedly disclosing the use of an optical isolator used to provide a substantially collimated light beam or a substantially converged light beam by a lens that is disposed outside of the package case.

Again, neither Shibnuma '689 nor Shimizu '142, whether taken in combination or individually, discloses Applicants' claimed "optical isolator" in combination with other features, that is arranged to optically couple to a distal end of the optical fiber inside a package case for isolation and optical coupling with another optical fiber provided outside the package case, as defined in Applicants' base claims 1, 5, 6 and 13. Moreover, neither Shibnuma '689 nor Shimizu '142 discloses an optical transmitter module that is provided with a pipe-like support member projecting from the side face of the package case for fixing the optical isolator, and of be formed so that the optical isolator is fixed by welding on its whole perimeter to the pipe-like support member, so as to arrange the isolator at the distal end of the projecting support member.

In order to establish a *prima facie* case of obviousness under 35 U.S.C. §103, the Examiner must show that the prior art reference (or references when combined) must teach or suggest all the claim limitations, and that there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings, provided with a reasonable expectation of success. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and **not** based on Applicants' disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). See MPEP 2143. In other words, all the claim limitations must be taught or suggested by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." In re Wilson, 424 F.2d 1382, 1385, 165 USQP 494, 496 (CCPA 1970).

Moreover, "obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching, suggestion or incentive supporting the combination." ACS Hospital System, Inc v. Montefiore Hospital, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). The Examiner must point to something in the prior art that suggests in some way a modification of a particular reference or a combination of references in order to arrive at Applicants' claimed invention. Absent such a showing, the Examiner has improperly used Applicants' disclosure as an instruction book on how to reconstruct to the prior art to arrive at Applicants' claimed invention.

In the present situation, both Shibnuma '689 and Shimizu '142 fail to disclose and suggest Applicants' base claims 1, 5, 6 and 13. Therefore, Applicants respectfully request that the rejection of claims 1, 5-7 and 11-14 be withdrawn.

Lastly, claim 15 has been rejected under 35 U.S.C. §103 as being unpatentable over Shibnuma, U.S. Patent No. 4,803,689 in view of Shimizu, U.S. Patent No. 5,960,142 and further in view of Shibukawa, U.S. Patent No. 5,049,429 or Lemaire et al., U.S. Patent No. 5,478,371 for reasons stated on pages 6-7 of the final Office Action (Paper No. 8). Claims 8-10 and 16 have been rejected under 35 U.S.C. §103 as being unpatentable over Shibnuma, U.S. Patent No. 4,803,689 in view of Shimizu, U.S. Patent No. 5,960,142 and further in view of Tatsuta, U.S. Patent No. 6,108,359 for reasons stated on page 7 of the final Office Action (Paper No. 8). Again, since these rejections are predicated upon the correctness of the rejection of Applicants' base claims 1, 5, 6 and 13 under 35 U.S.C. §103, Applicants respectfully traverse these rejections primarily for the same reasons discussed against the rejection of Applicants' base claims 1, 5, 6 and 13.

In view of the foregoing amendments, arguments and remarks, all claims are deemed to be allowable and this application is believed to be in condition to be passed to issue. Should any questions remain unresolved, the Examiner is requested to telephone Applicants' attorney at the Washington DC area office at (703) 312-6600.

INTERVIEW:

In the interest of expediting prosecution of the present application, Applicants respectfully request that an Examiner interview be scheduled and conducted. In

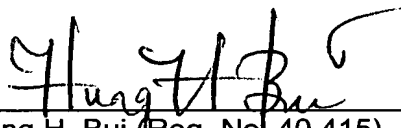
accordance with such interview request, Applicants respectfully request that the Examiner, after review of the present Amendment, contact the undersigned local Washington, D.C. area attorney at the local Washington, D.C. telephone number (703) 312-6600 for scheduling an Examiner interview, or alternatively, refrain from issuing a further action in the above-identified application as the undersigned attorneys will be telephoning the Examiner shortly after the filing date of this Amendment in order to schedule an Examiner interview. Applicants thank the Examiner in advance for such considerations. In the event that this Amendment, in and of itself, is sufficient to place the application in condition for allowance, no Examiner interview may be necessary.

To the extent necessary, Applicants petition for an extension of time under 37 CFR §1.136. Please charge any shortage of fees due in connection with the filing of this paper, including extension of time fees, to the Deposit Account of Antonelli, Terry, Stout & Kraus, No. 01-2135 (Application No. 500.39005X00), and please credit any excess fees to said deposit account.

Respectfully submitted,

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